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ABSTRACT

This manual has been designed to guide courses on potato production sponsored by the International Potato Center (CIP) in Lima (Peru). It describes the CIP Course Evaluation System that is presently used and provides guidelines on how to use feedback more effectively for improving training. CIP evaluations are largely formative. The CIP focuses on training individuals from developing countries in the areas of research and potato production skills, in an effort toward human resource development. As each course is different, the course organizer should adapt the evaluation system to address the needs of the specific course. This manual has been planned for use by course organizers who have had little or no formal training in course evaluation; it is designed for use as a training module. The sections contain basic information on the system and the objectives and implementation procedures for each component. A guide on how to use the manual and to determine which sections should be emphasized is provided. The manual also incorporates its own evaluation in the form of a pretest-posttest for use in assessing understanding of the manual. The CIP evaluation system has been developed in the Training and Communications Department during the past five years. Criteria for developing multiple-choice, open-ended, and practice questions; instructions to participants; pre- and posttest summary sheets; continued activity evaluation forms; a final questionnaire; and a posttest of the manual are appended. (TJH)

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Evaluation Manual for CIP Courses

Objectives and Implementation Procedures

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Evaluation Manual for CIP Courses

Objectives and Implementation Procedures

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1986

The EVALUATION MANUAL FOR CIP COURSES has been designed to guide courses on potato production sponsored by the International Potato Center (CIP). It describes the CIP COURSE EVALUATION SYSTEM that is presently in use and provides guidelines on how to use feedback more effectively for improving training. As each course is different, the course organizer should adapt the evaluation system to address the needs of the course.

This manual has been planned for course organizers that have had little or no formal training in course evaluation. The sections contain basic information on the system, and the objectives and implementation procedures for each component. The appendixes include the evaluation instruments and additional information on how to develop tests or inform trainees about evaluation procedures.

The manual is designed to be used as a training module. At the beginning, you will find a "Guide to Using the Manual" for determining which sections should be read. The manual also incorporates its own evaluation, as a pre-test and post-test for before and after reading the manual.

The CIP COURSE EVALUATION SYSTEM has been developed in the Training and Communications Department during the last five years, with the input of numerous CIP headquarters and regional staff, as well as national program staff who have organized courses. Moreover, the Training and Communications Department is grateful to trainees in CIP courses who have contributed greatly to the evaluation of the system.

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Guide to using the manual

You are reading this manual because:	Read Section: (A:Appendix)
You have never used the system and want to know in general terms what it is all about	1
You want to evaluate a course and would like to know which part of the system can be useful to you	1.1 / 2.1 / 3.1 4.1 / 5.1 / 6.1
You have used a component of the evaluation system to evaluate your courses and would like to review how to apply that component. Which component?	
a. Pre-test	2
b. Post-test	3
c. Partial tests	4
d. Continued activity evaluation	5
e. Final questionnaire	6
You find that participants and instructors need to be better informed about the evaluations. Which component?	
a. Pre-test	2 & A:B-1
b. Post-test	3 & A:B-2
c. Partial tests	4 & A:B-3
d. Continued activity evaluation	5 & A:B-4
e. Final questionnaire	6 & A:B-5
You want to develop a pre-test/post-test	2/3 & A:A-1
You want to develop partial tests	4 & A:A-1-2-3
You would like to use the evaluation results for improving your training. Which component?	
a. Pre-test	2.3
b. Post-test	3.3
c. Partial tests	4.3
d. Continued activity evaluation	5.3
e. Final questionnaire	6.3

Pre-test of the manual

A pre-test is provided for you to assess your initial knowledge on course evaluation. After finishing, check the correction sheet on page 6. Check it with your results on the post-test after you have read the manual, and determine how much you have learned.

1. A pre-test is used to assess a participant's:

   a. knowledge of course objectives
   b. adequacy of previous formal training
   c. knowledge of prerequisite skills for attending a course
   d. expectations and needs concerning the course

2. A post-test:

   a. allows participants to detect the difficulties they have after each topic taught
   b. is necessarily more difficult than a test given at the beginning of a course
   c. assesses a trainee's knowledge of course topics when returning to post of work
   d. assesses a participant's knowledge of the objectives at the end of a course

3. Which of the following statements is true concerning partial tests?

   a. they are used to grade participants
   b. participants should never use books in answering the questions
   c. they stimulate continuous study and detect problems in learning
   d. they are designed to detect trainees who are not studying

4. The continued activity evaluations are used to:

   a. assess trainees' achievement of objectives
   b. assess the organization of a course while the course is in process
   c. evaluate mainly practical activities
   d. test participants' learning after a specific activity

5. The final questionnaire:

   a. measures participants' knowledge of course objectives at the end of the course
   b. is more difficult than a test given at the beginning
   c. collects general opinions of the participants at the end of a course
   d. detects participants' errors after finishing a topic

6. Multiple choice questions are:

   a. easy to answer
   b. objective
   c. easy to write
   d. used only in academic teaching

7. Open-ended questions are:

   a. difficult to evaluate objectively
   b. better for evaluating adults
   c. easy to correct
   d. easy to write

Pre-Test Correction Sheet		
Question No.	The correct answer is:	If you did not answer correctly, read:
1	a	Chapter 2
2	d	Chapter 3
3	c	Chapter 4
4	b	Chapter 5
5	c	Chapter 6
6	b	Appendix A-1
7	a	Appendix A-2

Section 1

OVERVIEW OF THE COURSE EVALUATION SYSTEM

OVERVIEW OF THE COURSE EVALUATION SYSTEM

1.1 Introduction

The International Potato Center (CIP) has trained more than 5000 potato workers from around the world. Human resource development through training is a costly expenditure but is essential for the development of national potato programs; however, not all training activities are equally useful. CIP considers training to be effective when individuals from developing countries acquire research and potato production skills, and if these skills are applied in their work.

For training to be effective, instructors, materials, and training procedures must adapt to the conditions of national programs and the needs of individuals. The need for systematic evaluation emerges to ensure that this adaptation occurs and to monitor if learning actually is taking place. Thus, evaluation is not seen as an end in itself, but is conceived as a mechanism to improve the training and learning process.

The evaluation system described in this manual, or components of it, has been used in over 45 courses during the last five years. The system has been evaluated by CIP Training and Communications Staff, and experience has demonstrated its usefulness in evaluating and improving teaching and learning.

1.2 Objectives of the System

- Evaluation should be a mechanism to improve training. At CIP, the evaluations are mainly formative, in that they help improve training and learning while in process.
- Evaluation should be used to appraise a training activity once it is finished and to report results. This type of evaluation is summative and is used at CIP to judge the overall value of training events.

1.3 Description of the System

To accomplish the objectives of a course, the organizer should carefully monitor participants' learning, as well as the teaching procedures and the course organization. The components of the course evaluation system, listed below, guide this monitoring.

- For evaluating participants' learning:
  - Pre-test
  - Post-test
  - Partial tests
- For evaluating the teaching and organization of the course:
  - Continued activity evaluation
  - Final questionnaire

The evaluation described is intended to be a flexible system, in which a course organizer should determine which component is applicable considering the characteristics of the course.

1.4 Objectives of the Manual

The objectives of the Manual are to enable the reader to:

- Describe the course evaluation system in general and its components.
- Apply the different evaluation instruments, and use their results for improving the course and the participants' learning.
- Develop tests.
- Determine the type of evaluation needed for different courses.

Since each course organizer has different experiences and needs concerning evaluation, this Manual has been designed to guide you to the information that is most useful for your requirements. Please read the "Guide to Using the Manual" on page 4, select the statement that best represents your needs, and read the sections indicated.

Section 2

PRE-TEST

PRE-TEST

2.1 Objectives

The pre-test assesses course participants' knowledge of the course objectives when starting a course. This test usually consists of multiple choice questions covering the information and skills a trainee will learn in the course. Each topic covered will have several questions, which should reflect the objectives and level of teaching.

2.2 Implementation procedures

Previous to the course

Course instructors should write several multiple choice questions for their topics and select the best. Instructors developing these questions should read "Criteria for Developing Multiple-Choice Questions" (Appendix A-1). You may also wish to use some of the questions found in "CIP's Production Course Manual Pre-test/Post-test."

During the test

The pre-test should be given as soon as possible after a course starts, preferably after the initial welcome. If participants arrive late, they should take the test before starting the course. Before giving the test, explain to the participants the purpose of the evaluation, reassuring them that it is not intended for evaluating individual knowledge, but is necessary to determine the level of teaching. (Appendix B-1, "Instructions to Participants: Pre-test").

Allow 45 minutes to 1 hour for answering the test. Do not explain the content of the questions to the participants; there will be time for this when the topics are taught. Take note of problems participants express during the test, as these comments will help you in reviewing questions for future courses.

2.3 Using feedback

Correct the test and summarize the results. You may use the "Pre-test Summary Sheet" found in Appendix C-1. Discuss the results with the instructors individually, and advise them of the group's level the group has in the topic they will teach. Do not give the results of this test to participants, as the same one is generally used for the post-test.

The results of the pre-test may vary from course to course. If the test questions are well written, and if they reflect course objectives and actual learning needs of the participants, you should expect to have between 0 to 30 percent correct answers in the total test and in specific topics. If this is not the case, and you have more than 40 percent, you may be faced with one or more of the following situations:

- First, check if the questions are constructed according to the criteria stated in Appendix A-1.
- Second, check if the test was too easy and did not reflect the objectives of each topic.
- Third, if the test is done correctly, instructors should upgrade the teaching to the level of the participants. Nevertheless, instructors should be sure that background information is always provided for those trainees that are below the level of the group.

Section 3

POST-TEST

POST-TEST

3.1 Objectives

The post-test assesses the extent to which participants know the course objectives at the end of the course. Usually, the same questions used in the pre-test are used in the post-test. The post-test should not have more questions than the pre-test, nor be more difficult than the pre-test. The difference between correct answers attained the post-test and in the pre-test is considered to be a measurement of learning that can be attributed to the course.

3.2 Implementation procedures

Leave sufficient time at the end of the course to correct the test and to analyze the results with the trainees. Before giving the test, explain to participants its purpose, reassuring them that it will not be used to grade them individually. Explain that the intention is to know if the course has been successful and to detect areas that need review (Appendix B-2, "Instructions to Participants: Post-test").

Allow 45 to 60 minutes for completing the test. Do not try to help participants find the correct answers. This is not the time to teach or clarify doubts; you should do that after the test. Take note of problems trainees have in responding to the test questions, these problems can be reviewed later.

3.3 Using feedback

In a successful course, if the post-test adequately assesses course objectives and if teaching has been effective, the trainees' average on the post-test will be between 80 and 100 percent.

Feedback from the post-test is useful for improving the following aspects:

- Trainees learning:
  The trainees should have the opportunity to see their post-tests corrected, indicating correct and incorrect responses. On the first page you may indicate the total number of correct answers obtained in the pre- and post-tests to make participants aware of their learning progress. For feedback to be effective, trainees should have time to discuss doubts with instructors. The best time for this discussion is the final review session. You may use the "Post-test Summary Sheet" found in Appendix C-2 to summarize results of the test.

- Improving future courses:
  The results of the post-test compared with the pre-test are the best indicator of a course's success. If the post-test results are low, the course organizer should analyze the cause of the problem and correct it in future courses. If certain questions are not answered correctly by a large number of trainees, this is usually due to their not being written correctly or the content not being covered sufficiently during the course.

Section 4

PARTIAL TESTS

PARTIAL TESTS

4.1 Objectives

Partial tests are designed to evaluate participants' learning after specific topics. The purpose of this type of testing is to stimulate continuous study, and correct problems and errors in trainees' learning. These tests evaluate the achievement of each objective and are not designed to discriminate among participants. Partial tests may be given daily or after each major topic.

The type of questions used vary depending on the objective to be taught in each topic. Nevertheless, most partial tests usually consist of open-ended or multiple-choice questions. If you are interested in developing this type of tests, see Appendixes A-1 and A-2.

In some cases, a topic is best evaluated during a practical session. If this is the case, you will need to establish objective criteria for assessing participants' skills. (See Appendix A-3.)

4.2 Implementation procedures

Prior to the test

Determine the frequency and dates for giving the partial tests. Course instructors should be asked to write several questions on the topic they are teaching. The answer to each question should also be written, specifying the main aspects to be included for considering the answer correct. Make sure that there is an adequate balance between problem solving questions and factual information questions.

During the test

For daily partial tests, 15 minutes each morning should be sufficient, with three to five questions on the topics of the previous day. If your partial tests are after each major course topic, a 30- to 60-minute test is more appropriate. Open-book tests can be used if you wish to place trainees in a real life situation where references can be consulted to answer problems. For some topics, problem solving tasks may be assigned to be done overnight. In any case, the course organizer should take care that the testing procedures do not cause undue tension for the participants.

4.3 Using feedback

The test should be corrected immediately. The results should be reviewed with the course organizer and problems analyzed. Immediate feedback to participants is very important. Hand back the tests with corrections. This could be done during the coffee break in the afternoon or the next morning. It is important that the instructor be present for answering trainees' questions.

Section 5

CONTINUED ACTIVITY EVALUATION

CONTINUED ACTIVITY EVALUATION

5.1 Objectives

This evaluation is designed to provide specific information on each course activity as it takes place. It evaluates depth, usefulness and new knowledge, instructors' effectiveness, amount of time, and training materials used. This evaluation permits continuous monitoring of activities, and thus remedial activities can be taken as needed. A simple tool (Appendix D-1) has been developed, for participants to record their opinions of course activities.

5.2 Implementation procedures

Prior to the course

Determine which activities will be evaluated. We strongly recommend evaluating all planned activities: opening session, exercises, practicals, field visits, excursions, case studies, and social events. All of these can affect the success of a course.

During the course

At the beginning of the course explain to participants the procedures for the activity evaluation. Hand out the evaluation first thing each morning. Remind participants to evaluate each activity immediately after it is finished. All participants should hand in the evaluation form at the end of the day, as delay may cause their comments to be unreliable.

5.3 Using feedback

Constant feedback of results during the course is essential for the continuous evaluation of activities to be effective. Summarize results, and analyze them the next morning with instructors. A summary form is found in Appendix D-2. Most importantly, the course organizer and instructors have to make decisions concerning emerging problems. These decisions may involve any of the following actions:

- Adapting the teaching level to the group level:
  If the group or individuals have difficulty in understanding certain topics, organize review session to improve comprehension in topics that follow.

- Correcting instructor's teaching methodology:
  All instructors can learn from the opinions of their trainees to correct errors in teaching methods, i.e., modifying the use of materials and blackboard, and speed of presentation; adding examples to clarify the content; or making a more active presentation.

- Providing individual attention to trainees with special problems:
  To ensure that participants achieve the course objectives, try to detect which ones have problems in understanding or do not have the prerequisite skills.

- Improving quality of training materials:
  This may include field, laboratory, or greenhouse materials used for teaching purposes. It may also involve visual materials such as slides, overhead transparencies, and the blackboard. Furthermore, you should analyze comments on the written training materials distributed to trainees.

- Adjusting time of specific activities:
  Certain types of activities, i.e., practicals or visits, may need to be adjusted to improve the quality of the course.

- Adding additional activities to stimulate participation and learning: If you discover that the participants do not find the course content useful or relevant, you may want to arrange activities such as case studies, visits or discussions.

- Adjusting support services:
  Changes in living conditions during the course such as transportation, food, and housing may be necessary.

Section 6

FINAL QUESTIONNAIRE

FINAL QUESTIONNAIRE

6.1 Objectives

The final questionnaire is designed to provide general information on the overall value of a course as perceived by participants at the end of the course. A series of questions are available (Appendix D-3) and should be adapted to meet evaluation needs for specific courses. This questionnaire includes questions on knowledge acquired, relevancy of content, depth of coverage, balance between theory and practice, teaching materials, organization, non academic aspects, and follow-up.

6.2 Implementation procedures

The course organizer should determine which questions are of interest for including in the test. Add those that are relevant to the specific characteristics of a course.

The questionnaire is usually given to participants 1 to 3 days before the end of the course, asking them to complete it after class. Allow enough time to review the results so that you can discuss the most relevant problems with the group.

6.3 Using feedback

Feedback from this questionnaire is used most effectively when the results are available for the final discussion session. An outline of participants' opinions is very useful to stimulate discussion and make instructors aware of overall achievements and deficiencies.

Furthermore, a summary of the results is useful for planning similar courses in the future and for the course report.

Appendixes

APPENDIX A-1 CRITERIA FOR DEVELOPING MULTIPLE CHOICE QUESTIONS

Multiple choice questions have the following structure:

In producing potato from TPS, which method combines the advantages of TPS and seed tubers?		Stem
a. transplanting seedlings to the field	Distractors	Options
b. field sowing of TPS		
c. pelleted seed		
d. planting seedling tubers	Correct answer	

These questions should be developed to assess trainees' learning of the main course objectives. Avoid asking questions on less important details. Suggestions for writing these questions are listed below.

- Never write questions that try to catch trainees in trivial errors.
- Just one option should be correct. In some cases, the "most correct" answer can be considered correct.
- No option should be obviously correct or incorrect.
- All incorrect options should be possible and sensible.
- Good distractors are those that bring out incorrect practices or doubts.
- Do not give clues or indications that lead trainees to detect which options are correct or incorrect, such as making the correct option longer than the distractors; including in the stem of the question a cue to which is the correct answer (gender, number, tense); always placing the correct answer in the same place among the various options.
- The number of options may vary, generally four or five.

- The questions should be short and concise. Trainees should not spend much time reading. Avoid giving introductory statements that are covered during teaching. An example of the latter is (underlined words should be taken out):

Sprout cuttings is a rapid multiplication technique in which each cutting should have at least one shoot tip and two root tips to ensure growth of the new plantlet. When planting sprout cuttings, the shoot tip portion should be:

a. clearly above sand level at planting
b. slightly above sand level after the first watering
c. slightly below sand level after the first watering
d. ½ cm below sand level at planting

- Do not write questions in a negative form as they tend to confuse. An example of what should not be done is:

Roguing is not a method to:

a. select and multiply the best potato plant of a seed field
b. eliminate any undesirable potato plant from a seed field
c. do negative selection

- If you want to use as a correct option "none of the above" or "all of the above," you must also use this option in questions where it is clearly incorrect.

APPENDIX A-2 CRITERIA FOR DEVELOPING OPEN-ENDED QUESTIONS

Open-ended questions require trainees to write answers in their own words, involving a few lines to several pages. At first glance, these questions would seem to be easily developed; however, they are very difficult to evaluate objectively.

To ensure that all trainees interpret the questions in the same way, you must define precisely what they have to do. To make correcting easier, you should also write the answer when writing these questions, indicating the elements that trainees must include for the question to be considered correct. An example of this type of question and criteria for answering are the following:

Question : In roguing, which type of plants would you remove from the field?

Criteria : Answer should include
- a. diseased plants
- b. atypical plants
- c. volunteer plants

APPENDIX A-3 CRITERIA FOR DEVELOPING PRACTICE QUESTIONS

If the objective of your topic is that a participant should be able to carry out an activity in practice, you will also need to evaluate the topic in practice. A practice evaluation question should state explicitly what a person should be able to do for it to be considered correct. An example of this type of question and criteria for evaluating the practice is the following:

Question : Select a plantlet at the size required for making single-node cuttings. Cut it into all possible cuttings, leaving a sufficient base for future growth. Follow the required procedures for cutting.

Criteria :
a. Plantlet selected must have 5 to 6 simple leaves
b. Each segment must have a leaf and a node
c. The remaining base should have one strong leaf
d. Sanitary procedures (clean hands and utensils) and security measures (folded paper towel) should be taken

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APPENDIX B-1 INSTRUCTIONS TO PARTICIPANTS: PRE-TEST

Participants and instructors should be informed of the objectives of the pre-test, as well as the use that will be given to the results. Make sure that all participants do not feel threatened by this test. You should be very careful not to tell or let participants believe that the post-test will be the same as the pre-test. Simply inform them that they will be evaluated again at the end of the course. Explain the following aspects:

- This test contains a series of questions related to topics that will be covered in the course.

- Do not worry if you do not know the answer. This test evaluates knowledge on course objectives, and you are not expected to know them when starting the course. It will not be used to grade you. It is designed to assist the instructors and course organizer to determine the level at which different topics will be taught, adjusting them to better meet your needs.

- Each question has only one correct answer. If you mark more than one option, your answer will be considered incorrect.

- Please do not mark any option in those questions that you do not know the answer. Do not make random guesses.

- If you do not understand a question, please ask the course coordinator. If you have any comments on specific questions, please write them directly on the test.

- Although you are asked to give your name on this test, results will be kept anonymous. Only the course organizer and instructors will see the results.

APPENDIX B-2 INSTRUCTIONS TO PARTICIPANTS: POST-TEST

Participants and instructors should be informed of the objectives of the post-test, as well as how the results will be used. Make sure that participants do not feel threatened by this test. Explain the following aspects:

- This test contains a series of questions related to topics that were covered in the course.
- Do not worry if you do not know the answer. This test evaluates your knowledge on course objectives. The test will not be used to grade you. It is designed to assist the instructors and course organizer to determine the overall learning level and training effectiveness.
- Each question has only one correct answer. If you mark more than one option, your answer will be considered incorrect.
- Please do not mark any option in those questions where you do not know the answer. Do not make random guesses.
- If you do not understand a question, please ask the course co-ordinator. If you have any comments on specific questions, please write them directly on the test.
- Although you are asked to give your name on this test, results will be kept anonymous. Only the course organizer and instructors will see the results.

APPENDIX B-3 INSTRUCTIONS TO PARTICIPANTS: PARTIAL TESTS

Participants and instructors should be informed of the objectives of partial tests, as well as the use that will be given to the results. Participants should not be threatened by these tests, but see them as an opportunity to demonstrate and practice what they is beeing taught, as well as receive feedback from instructors. Explain the following aspects:

- These tests will be given (daily/twice-a-week). The test will last .... minutes. It will contain questions on topics taught during the day(s) previous to the test.

- These tests will not be used to grade you. They are designed to assist instructors and the course organizer to detect in which topics participants have doubts. You will be given feedback after the tests, and should ask in areas where you are in doubt.

- If you do not understand a question, please ask the course coordinator.

- Although you are asked to give your name on this test, results will be kept anonymous. Only the course organizer and instructors will see the results.

APPENDIX B-4 INSTRUCTIONS TO PARTICIPANTS: CONTINUED ACTIVITY EVALUATION

For this evaluation, the participants must be informed of the following:

- This evaluation is designed to obtain information concerning the organization and teaching as the course takes place, and to provide feedback to the course organizers for immediate corrective actions.

- The course coordinator should read the form in Appendix D-1 with the participants.

- Write your opinions immediately after each activity on the form provided. Put the activity name on the left-hand column and mark the boxes that correspond to your opinions about that activity. The course coordinator will indicate which activities are to be evaluated. Use the right-hand box to write comments and suggestions, and to explain when you have marked in boxes with an asterisk.

- You do not have to write your name on this evaluation form. All comments will be considered anonymous.

- Always hand in the evaluation form at the end of each day.

- The summarized results will be discussed the next morning with the instructor and course coordinator, and actions will be taken when necessary. They will analyze problems found and determine if:

  a. the level of the course is appropriate for the group or if some individuals need additional background information;
  b. the instructors teaching the skills need improvement in presentation;
  c. training materials were useful and relevant (visuals, blackboard, field, greenhouse, or laboratory materials, and written materials given to participants);
  d. time allotted for each activity is sufficient.

APPENDIX B-5 INSTRUCTIONS TO PARTICIPANTS: FINAL QUESTIONNAIRE

When handing out the final questionnaire, you may explain to participants the following:

- This questionnaire summarizes your opinions on the course as a whole and it will be used to improve the course in the future.
- We will use your comments for discussion during the final discussion session.
- You should hand in this questionnaire on (date/hour).
- Your answers will be considered anonymous. You do not have to write your name on the questionnaire.

APPENDIX C-1 PRE-TEST SUMMARY SHEET

Participant	Question number						Score	
	1	2	3	4	5	(etc.)	total	%
1	x		x				2	40
2	x						1	20
3	x						1	20
4	x	x	x	x	x		5	100
5	x	x	x				3	60
6	x						1	20
Total	6	2	3	1	1		13	260
Topic average	Physiology 3,6 (11/3)			(etc.)				
						Course average	2.2 (13/6)	43 (260/6)

The Pre-Test Summary Sheet is used for analyzing pre-test results; all questions and scores are based on correct answers given by participants. The example above is analyzed based on a test containing 6 questions --actual tests should contain several questions to assess each objective. This summary sheet is useful to detect the level of each participant entering the course, the level at which the course should be taught, and to determine which questions or topics present difficulties.

In the above example, the course average achieved by the total group is 43%, which is above average for a pre-test. This would indicate that some participants started the course already knowing much about

the course topics, for example, participant 4 who answered correctly all of the questions. The course organizer should remember that in interpreting a pre-test the results should be low if the course objectives are new to the participants and if the test has been properly written (Appendix A-1, "Criteria for Developing Multiple Choice Questions").

The course organizer should observe that question No. 1 was responded correctly by all participants, which could mean that the question is too easy or has not been written properly.

An example of an analysis of questions per topic is also included, where questions 1 to 3 are assumed to be in the area of physiology. An average of 3.6 persons answered the questions correctly, which is above the average (2.2) achieved in the total test.

APPENDIX C-2 POST-TEST SUMMARY SHEET

Participant	Question number						Score		Learning index
	1	2	3	4	5	(etc.)	total	%	
1	X	X	"	X			3	60	+20
2	X	X	X	X			4	80	+60
3	X	X	X	X			4	80	+60
4	X	X	X	X	X		5	100	0
5	X	X	X	X			4	80	+20
6	X		X				2	40	+20
Total	6	5	5	5	1		22	440	180
Topic average	Physiology 5.3 (16/3)			(etc.)					
						Course average	3.6	73 (440/6)	+30 (180/6)

The Post-Test Summary Sheet is used for analyzing post-test results; all questions and scores are based on correct answers given by participants. The example above is analyzed based on a test containing 6 questions --actual tests should contain several questions to assess each objective. This summary sheet is useful to detect how much each participant has learned from the course and to determine which questions or topics present difficulties.

In the above example, the course average achieved by the total group is 73%. When comparing this result with that of the pre-test, a positive difference of 30% is found, which indicates the learning that has taken place. The course organizer should remember that the

post-test results should be high if the teaching has been effective and if the test has been properly prepared (Appendix A-1, "Criteria for Developing Multiple Choice Questions").

The course organizer should observe the variations in participants' learning. For example, participants 2 and 3 have learned much in the course; participant 6 has achieved little; participant 4 has the same result of 100% as in the pre-test and may not have learned much from the course. Note also that question 5 has been answered correctly only by one participant and should be analyzed to determine (a) if the question was too difficult, (b) if it was not covered in the course, or (c) if it was not properly written (Appendix A-1, " Criteria for Developing Multiple Choice Questions").

In the analysis of questions per topic in which questions 1 to 3 are assumed to be in the area of physiology, an average of 5.3 persons answered the questions correctly in the post-test, compared to 3.6 in the pre-test, which indicates that learning occurred in that topic.

The Post-Test Summary Sheet includes a column for calculating the learning index. This index results from subtracting the percentage of correct answers achieved by each participant in the pre-test from that achieved in the post-test. Positive results indicate the learning that has taken place. Note that participants who started the course with a low score can end with the highest learning index, having benefited most from the course. In some rare cases, you may find a negative learning score for individual participants, which should be analyzed carefully. This negative score may be due to misconstructed tests, participant's attendance problems, or teaching errors.

INTERNATIONAL POTATO CENTER (CIP)

CONTINUED ACTIVITY EVALUATION

Date: _____

In the left column, list the presentations, laboratories or other activities that took place today. Mark with an "X" the alternative that best represents your opinion about how the activity was performed. Complete the evaluation for each activity immediately after it is finished. Hand in this sheet at the end of the day.

ACTIVITIES	New Knowledge Acquired					Useful for your Work Needs			Depth of Treatment					Effectiveness of Instructor				Training Materials					Time				Specify suggestions in those cases that your answer is in a box marked by an asterisk (*).
	Much	Some	Very little *	None *	Reinforced previous knowledge	Basic needs	Occasional needs *	No need *	Excessively deep *	Somewhat deep *	Adequate	Somewhat superficial *	Very superficial *	Excellent	Good	Fair *	Deficient *	Excellent	Good	Fair *	Deficient *	None available	Required more *	Sufficient	Required less *	Activity should be omitted *	

APPENDIX D - 1 CONTINUED ACTIVITY EVALUATION INSTRUMENT

ACTIVITIES	New Knowledge Acquired					Useful for your work needs			Depth of treatment					Effectiveness of Instructor				Training Materials					Time				Specify suggestions in those cases that your answer is in a box marked by a asterisk (*).
	Much	Some	Very little *	None *	Reinforced previous knowledge	Basic needs	Occasional needs *	No need *	Excessively deep *	Somewhat deep *	Adequate	Somewhat superficial *	Very superficial *	Excellent	Good	Fair *	Deficient *	Excellent	Good	Fair *	Deficient *	None available	Required more *	Sufficient	Required less *	Activity should be omitted *	

Specify any negative or positive comment concerning the activities done today that could help us improve the course in the days left for its conclusion. Take into account both academic and non-academic aspects.

APPENDIX D-2 CONTINUED ACTIVITY EVALUATION SUMMARY FORM

INTERNATIONAL POTATO CENTER (CIP)

SUMMARY: ACTIVITY EVALUATION

Course: _____

Activity: _____

Instructor: _____ Date: _____

New Knowledge Acquired						Useful for your Work Needs				Depth of Treatment						Effectiveness of Instructor					Training Materials						Time				
Much	Some	Very little	None	Reinforced previous knowledge	No response	Basic needs	Occasional needs	No need	No response	Excessively deep	Somewhat deep	Adequate	Somewhat superficial	Very superficial	No response	Excellent	Good	Fair	Deficient	No response	Excellent	Good	Fair	Deficient	None available	No response	Required more	Sufficient	Required less	Activity should be omitted	No response

Comments: _____

APPENDIX D-3 FINAL QUESTIONNAIRE INSTRUMENT

Date: _____

We would like to know your opinions about how the course took place to improve in the future. Please mark an "X" in only one box under the answer that best represents your opinion. Write your comments below each question or on the reverse of the sheet of paper. Thank you very much for your collaboration.

1 Organization of the course:

	Overly structured	Somewhat too structured	Adequately structured	Somewhat unstructured	Very unstructured
*					
*					

Comments: _____

_____

_____

* Locations of training may be specified for all question, i.e., different centers where the course took place.

2 What is your opinion of the level of the course?

	Very high	High	Adequate	Low	Very low
*					

Comments: _____

_____

_____

3 How much new knowledge have you acquired in this course?

	Very much	Some	Very little	None
*				

Comments: _____

_____

_____

4 What do you think of the teaching ability of the instructors?

	Excellent	Good	Fair	Deficient
*				

Comments: _____

_____

_____

5 What do you think of the length of time dedicated to the different activities?

	Very long	Somewhat long	Adequate	Somewhat short	Short
Instructors' presentations					
Participants' presentations					
Field/store work					
Laboratory work					
Greenhouse work					
Visits					
Discussions					
Case study					
Course in general					

Comments: _____

_____

_____

6 What do you think of the time dedicated to theoretical and practical aspects?

	Very long	Somewhat long	Adequate	Somewhat short	Very short
Theory					
Practice					

Comments: _____

_____

_____

7 Specify those topics in which you consider theoretical aspects should have been extended or reduced.

Extended: _____

_____

_____

Reduced: _____

_____

_____

8 Specify those topics in which you consider practical aspects should have been extended or reduced.

Extended: _____

_____

_____

Reduced: _____

_____

_____

9 Specify those topics that will be most useful in your future work.

10 Is there any aspect which you would have liked to have been dealt with more deeply? Which one?

11 How could your experience have been better utilized during this course?

12 What is your opinion of the quality of training materials?

	Excellent	Good	Fair	Deficient	None available
Material distributed to participants					
Material used by instructors					

Comments:

13 What is your opinion about the amount of training materials?

	Too many	Sufficient	Insufficient	None available
Material distributed to participants				
Material used by instructors				

Comments: _____

_____

_____

14 What is your opinion of the physical facilities where the course took place?

	Excellent	Good	Fair	Deficient
Conference Room				
Greenhouse				
Laboratory				

Comments: _____

_____

_____

15 What is your opinion of the library facilities and services?

	Excellent	Good	Fair	Deficient	Non available	Were not used
*						

Comments: _____

_____

_____

16 Are there any positive or negative aspects to mention about the non-academic activities and support services (housing, meals, transportation, social activities, etc.)?

_____

_____

_____

_____

_____

17 What changes do you suggest to improve the course in the future?

_____

_____

_____

18 What type of collaboration do you consider you will need in the future from CIP/National Program?

_____

_____

_____

19 What is your opinion of the evaluation procedures used in this course?

	Very valuable	Good	Little use
Pre-test			
Post-test			
Partial Tests			
Continued activity evaluations			
This final questionnaire			

Comments: _____

_____

_____

Post-test of the manual

This post-test is provided to help you assess how much you have learned from the manual. After finishing, check the correction sheet on page 60.

1. A pre-test is used to assess a participant's:

   a. knowledge of course objectives
   b. adequacy of previous formal training
   c. knowledge of prerequisite skills for attending a course
   d. expectations and needs concerning the course

2. A post-test:

   a. allows participants to detect the difficulties they have after each topic taught
   b. is necessarily more difficult than a test given at the beginning of a course
   c. assesses a trainee's knowledge of course topics when returning to post of work
   d. assesses a participant's knowledge of the objectives at the end of a course

3. Which of the following statements is true concerning partial tests?

   a. they are used to grade participants
   b. participants should never use books in answering the questions
   c. they stimulate continuous study and detect problems in learning
   d. they are designed to detect trainees who are not studying

4. The continued activity evaluations are used to:

   a. assess trainees' achievement of objectives
   b. assess the organization while the course is in process
   c. evaluate mainly practical activities
   d. test participants' learning after a specific activity

5. The final questionnaire:

   a. measures participants' knowledge of course objectives at the end of the course
   b. is more difficult than a test given at the beginning
   c. collects general opinions of the participants at the end of a course
   d. detects participants' errors after finishing a topic

6. Multiple choice questions are:

   a. easy to answer
   b. objective
   c. easy to write
   d. used only in academic teaching

7. Open-ended questions are:

   a. difficult to evaluate objectively
   b. better for evaluating adults
   c. easy to correct
   d. easy to write

Post-Test Correction Sheet		
Question No.	The correct answer is:	If you did not answer correctly, read:
1	a	Chapter 2
2	d	Chapter 3
3	c	Chapter 4
4	b	Chapter 5
5	c	Chapter 6
6	b	Appendix A-1
7	a	Appendix A-2